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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,859	11/19/2003	Dana Eagles	930007-2192	9489

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EXAMINER	
KUMAR, PREETI	
ART UNIT	**PAPER NUMBER**
1751	

DATE MAILED: 08/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/717,859	EAGLES, DANA	
	Examiner	Art Unit	
	Preeti Kumar	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 12 June 2006.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 26-56 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 26-56 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Final Rejection

1. Claims 26-56 are pending. Claim 26 is independent.

Response to Amendment

2. The rejection of claim 43 under 35 U.S.C. 112, second paragraph, is withdrawn in light of applicants amendment to the dependency of the claim.

3. The rejection of claims 26-56 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Denton et al. (US 5,888,915) is maintained.

4. The rejection of claims 26-35, 39-42, 44-56 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rexfelt et al. (US 5,360,656) is maintained.

5. The rejection of claims 26-56 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Davenport (US 20020139503) is maintained.

Response to Arguments

6. Applicant's arguments filed June 12, 2006 have been fully considered but they are not persuasive.

Applicants urge that Denton does not teach the feature of depositing a CD element and does not teach a yarn. In addition, Denton does not teach spiral winding machine direction (MD) yarns.

Contrary to applicants arguments, Denton et al. teach that the very nature of paper machine clothing fabrics involves a weaving process wherein the yarn filaments are orthogonal. See col.1,ln.50-55 and col.4,ln.35-45. Thus Denton et al. do teach yarns and do teach that the clothing is constructed of both machine direction and cross machine direction fibers. Although Denton et al. do not use the term spiral winding, it would have been nonetheless obvious to one of ordinary skill in the art, to arrive at a textile structure made by spiral winding as recited by the instant claim 26 because Denton et al. teach a patterned PMC textile having fibers arranged in the machine direction which intersect and intermittently encapsulate the fibers running in the cross machine direction in general.

Applicants urge that Rexfelt, is directed to spiral winding of fabric strips, and not spiral winding yarns.

Contrary to applicants arguments, Rexfelt et al. teach two or more spirally-wound layers in which the spiral turns in the different layers are placed crosswise, i.e. such that the longitudinal threads in one layer make an angle both with the machine direction of the press felt and with the longitudinal threads in another layer. Thus, Rexfelt et al. do teach spiral winding of yarns and further teach that no irregularities are formed at the loom edges during weaving and the crossed longitudinal threads means an increased flow resistance and that two or more such spirally-applied layers can also be made with different thread spacings in the different layers. See col.3.

Finally Applicants urge that Davenport does not teach or suggest depositing a pattem of cross-machine direction (CD) elements onto a system of MD yarns.

Specifically Applicants urge that Davenport teach that there are no cross-machine-direction (CD) yarns in that fabric, and the base structure has CD stability because of the bonding of the machine-direction (MD) yarns side-by-side to one another.

Contrary to applicants arguments, Davenport et al. clearly state that that there are no cross-machine-direction (CD) ***yarns to UNRAVEL*** when the base structure is not woven. The instant claims to do not recite CD yarns but instead recite CD elements. Accordingly, examiner draws attention to figure 6 and paragraphs [0018] and [0049] where Davenport et al. teach a woven base fabric having both MD yarns and CD interdigitated loops.

Claim Rejections

7. Claims 26-56 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Denton et al. (US 5,888,915).

Denton et al. teach a paper machine clothings (PMC) textile structure comprised of interconnected bicomponent fibers in one direction or both the machine and cross machine direction that can be of a woven, knitted, or nonwoven construction are arranged in an orderly manner. See abstract and col.1,ln.15-20 and col.3,ln.50-65. Denton et al. teach that the textile has fibers arranged in the machine direction which intersect only with fibers running in the cross machine direction. It is preferred that the clothings of the present invention be constructed of fibers running in the machine or cross machine direction, but such clothings could be constructed of fibers which run in directions that are at angles to the machine and cross machine direction of a paper making machine. See col.4,ln.35-45.

Denton et al. teach that the bicomponent fiber structure permits selection of different materials for the sheath and core components. For instance, the sheath material may have a melting point lower than the melting point of the core material. Accordingly, a fused, bonded structure of bicomponent fibers can be formed where the sheath component has a melting point lower than the core component. By heating a fabric constructed of bicomponent fibers to a temperature greater than the melting point of the sheath component and lower than the melting point of the core component, with subsequent cooling of the fabric to below melt temperature of the sheath component, a fused, bonded structure will result. See col.4,ln.1-13.

Denton et al. teach that PMC fabrics are also porous media that must effectively achieve fluid flow, that is, either water flow in forming and pressing or air flow in drying. The porosity of the fabrics can greatly affect sheet properties important in the forming and pressing sections of the paper machine. Channels for transport are formed by the open spaces or interstices, between the warp and shute yarns. Channels also exist between the filaments at the crossover points. The weaving process limits the geometry of the pores because the yarn filaments are orthogonal. See col.1,ln.45-55.

Regarding the thermofusible, thermoplastic, high abrasion resistant polymers, Denton et al. teach that the bicomponent fibers include sheath-core combinations of co-polyester/poly(ethylene terephthalate), polyamide/poly (ethylene terephthalate), polyamide/polyamide, polyethylene/poly (ethylene terephthalate), polypropylene/poly(ethylene terephthalate), polyethylene/polyamide,

polypropylene/polyamide, thermoplastic polyurethane/polyamide and thermoplastic polyurethane/poly(ethylene terephthalate). See col.4,ln.15-20.

The textile taught by Denton et al. has dimensional stability improved by heat fusion at cross over points. Heat fusion also improves resistance to soiling. Fabric thickness is decreased, that is, fabrics are of a reduced caliber, attributable to the use of finer filaments and reduced thickness at cross over points. Reduced thickness at cross over points also improves the planarity of the fabric. Bicomponent fibers also form unique pore geometries upon heat fusion. See col.4,ln.50-60.

The industrial PMC textile taught by Denton et al. exhibit relatively planar, smooth surfaces after fusion. A network of bonds between intersecting fibers will be formed upon heat fusion of a clothing comprised of bicomponent fibers. Physical bonding of this kind will improve the dimensional stability and the heat fused intersecting yarns produced with bicomponent fibers provides a structure that should remain relatively cleaner than a clothing comprised of conventional monofilaments. See col.5,ln.60-65.

Denton et al. teach that the sheath/core filaments in PMC press fabric allow the batt fibers to be pushed through the yarns, and after bonding, the batt filaments will be essentially locked in place. Shedding of the batt fibers is decrease because of the thermal bonding. Thermal bonding of the base fabric will eliminate paths for fluid travel. See col.8,ln.30-45.

Accordingly the paper machine clothing textile structure taught by the prior art teaching of Denton et al. is a forming, pressing, and drying sections of a paper machine

comprised of a structure of intersecting and interconnected yarns, the yarns being comprised of a plurality of bicomponent monofilament fibers, said bicomponent monofilament fibers having a sheath component and a core component, wherein the sheath component is selected from a material having a melting point lower than the melting point of the core component, wherein the plurality of bicomponent monofilament fibers are heated to a temperature greater than the melting point of the sheath and lower than the melting point of the core, and the yarns are arranged in a first direction and a second direction in an orderly non-random intersecting pattern and said yarns are interconnected with each other and thus, the teachings of Denton et al. anticipate the material limitations of the instant claims.

Alternatively, even if the teachings of Denton et al. are not sufficient to anticipate the material limitations of the instant claims, it would have been nonetheless obvious to one of ordinary skill in the art, to arrive at a textile structure made in a manner comprising the steps of spiral winding as recited by the instant claim 26 because Denton et al. teach a patterned PMC textile having fibers arranged in the machine direction which intersect and intermittently encapsulate the fibers running in the cross machine direction in general.

8. Claims 26-35, 39-42, 44-56 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rexfelt et al. (US 5,360,656).

Rexfelt et al. teach that two or more spirally-wound layers in which the spiral turns in the different layers are placed crosswise, i.e. such that the longitudinal threads

of the strip in one layer make an angle both with the machine direction of the press felt and with the longitudinal threads of the strip in another layer. Variations in the thread tension across the base fabric can be reduced considerably, since the longitudinal threads of the final layer (=warp threads of a flat-woven strip) are not parallel to the machine direction of the press felt. Instead, the tension at each point becomes a mean of the tension in many different longitudinal threads. No irregularities are formed at the loom edges during weaving and the crossed longitudinal threads means an increased flow resistance and that two or more such spirally-applied layers can also be made with different thread spacings in the different layers. See col.3.

In figures 1 and 2, Rexfelt et al. illustrates a flat-woven fabric strip of yarn material having two mutually orthoganol thread systems consisting of longitudinal threads (warp threads) and cross threads (weft threads) with two longitudinal which are cut before the strip is wound on to the supply reel. See col.4,ln.20-60

In figure 3, Rexfelt et al. illustrates that each longitudinal thread (warp thread) of the strip makes an angle with the machine direction MD of the fabric/press felt. These oblique longitudinal threads run uninterrupted through the entire base fabric layer, whilst the cross threads (weft threads) are intermittently interrupted. Rexfelt et al. also teach that it is commonly known that a traditional tubular-woven endless base fabric, has the longitudinal threads (weft threads) parallel to the machine direction and the cross threads (warp threads) run uninterrupted across the entire width of the base fabric. See col.4,ln.60-col.5,ln.5.

In figure 4 Rexfelt et al. illustrate a multilayer type spirally-wound layers placed crosswise on each other yielding the advantage of an increased flow resistance occurring, since the longitudinal threads in both layers make an angle with each other. Rexfelt et al. also teach a textile dispensed with a spirally-wound layer of base fabric combined with a traditionally tubular-woven layer of base fabric to form a base fabric of multi-layer type. See col.5,ln.10-15.

Rexfelt et al. illustrate in figure 5 how the end edges of two juxtaposed spiral turns are in edge-to-edge relationship and joined by sewing. Figure 5 also schematically illustrates a top layer of fiber material, such as a batt layer, arranged on the base fabric by needling. See col.5,ln.30-35.

Rexfelt et al. illustrate in figure 6 shows an adjacent longitudinal edge portions of adjoining spiral turns are arranged by overlapping, wherein the edges having a reduced thickness so as not to give rise to an increased thickness in the area of transition. See col.5,ln.40-45.

In figure7 Rexfelt et al. illustrate that the spacing between longitudinal threads is increased at the edges of the strip and the longitudinal threads of the edge portions are interlaced. The result is an unchanged spacing between longitudinal threads in the area of transition. See col.5,ln.45-50.

Accordingly, the teachings of Rexfelt et al. anticipate the material limitations of the instant claims.

Alternatively, even if the teachings of Rexfelt et al. are not sufficient to anticipate the material limitations of the instant claims, it would have been nonetheless obvious to

one of ordinary skill in the art, to arrive at a textile structure made of spiral winding machine direction (MD) yarns to form a system having a defined width; and depositing a pattern of cross machine direction (CD) elements onto said system of MD yarns because Rexfelt et al. teach a patterned PMC textile structure having spirally-wound layers placed crosswise on each other wherein the longitudinal threads make an angle with each other and can be combined with a traditionally tubular-woven layer of base fabric to form a multi-layer type fabric.

9. Claims 26-56 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Davenport (US 20020139503).

Davenport teaches an on-machine-seamable papermaker's fabric has a base structure which is a flattened array of a spirally wound multicomponent yarn. The flattened array has two layers, two sides, a length, a width and two widthwise edges. In each turn of the spiral winding, the multicomponent yarn has a substantially lengthwise orientation and is joined side-by-side to those adjacent thereto by a fusible thermoplastic material in each of the two layers. The multicomponent yarn forms seaming loops along the two widthwise edges. At least one layer of staple fiber material is needled into one of the two sides of the base structure and through the two layers. See abstract.

Davenport teaches that the multicomponent yarn is spirally wound to a desired width, portions of the array are exposed to heat at a temperature sufficient to melt the at least one thermofusible strand or coating, but not the other individual yarn strands, of the multicomponent yarn. The fused thermoplastic material of the thermofusible strand,

strands or coating flows between adjacent turns of the multicomponent yarns in the array. When the fused thermoplastic material is allowed to solidify, it joins the adjacent multicomponent yarns to one another in a side-by-side manner. See [0024]

Davenport teaches that the array of multicomponent yarns is flattened, and, as such, has two layers, two sides, a length, a width and two widthwise edges. The multicomponent yarn in each of the plurality of turns has a substantially lengthwise orientation in each of the two layers. Along the two widthwise edges of the flattened array are a plurality of seaming loops formed by the multicomponent yarn. The seaming loops, preferably, are formed by every other turn of the multicomponent yarn. See [0025].

Davenport teaches that the individual yarn strands of the multicomponent yarn 16, other than the thermofusible strand or strands, are extruded from synthetic polymeric resin materials, such as polyamide, polyester, polyetherketone, polypropylene, polyaramid, polyolefin, polyphenylene sulfide (PPS) and polyethylene terephthalate (PET) resins, and copolymers thereof, and incorporated into yarns according to techniques well known in the textile industry and particularly in the paper machine clothing industry. See [0041]. The thermofusible strand, strands or coating are of a thermoplastic material having a melting point lower than that of the other individual yarn strands making up the multicomponent yarn 16. The thermoplastic material may, for example, be polyamide 66, low-melt polyamide 6 or polyurethane. See [0042].

Davenport teaches that the press fabric is planar and has no yarn knuckles, thus is smooth. There are no cross-machine-direction (CD) yarns to unravel to form the loops required for seaming, yet the base structure has CD stability because the machine-direction (MD) yarns are bonded side-by-side to one another. The cost to produce a multilayer structure in accordance with the present invention is less than that of the prior-art woven structures. Finally, the Z-direction compressibility, openness and void volume of the base structure can be controlled by preselecting the number of thermofusible strands in the multicomponent yarn. See [0062].

Accordingly, the teachings of Davenport anticipate the material limitations of the instant claims.

Alternatively, even if the teachings of Davenport are not sufficient to anticipate the material limitations of the instant claims, it would have been nonetheless obvious to one of ordinary skill in the art, to arrive at a textile structure made of spiral winding machine direction (MD) yarns to form a system having a defined width; and depositing a pattern of cross machine direction (CD) elements onto said system of MD yarns because Davenport teach an on-machine-seamable papermaker's textile structure having multicomponent yarn that is spirally wound to a desired width, and having cross machine direction stability.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Preeti Kumar whose telephone number is 571-272-1320. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Mc Ginty can be reached on 571-272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Preeti Kumar PK.
Examiner
Art Unit 1751

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1751